



Records of regalecid fishes in Argentine waters

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Abstract

The first two specimens of *Regalecus glesne* Ascanius, 1788, collected in the Argentine Sea, at Playa Unión beach, 43° 18' S, 65° 02' W are reported. Body measurements, meristic characters and morphological data are given. The most important differences with two other regalecid species, *R. russelii* Cuvier and *R. kinoi* Castro-Aguirre *et al.* 1991, from the Pacific coasts of Mexico, are considered. Also, a specimen caught at 43° 03' S, 59° 14' W, at 993 m depth, previously identified as *Agrostichthys* sp. is rediagnosed as *Agrostichthys parkeri* Benham, 1904. The distribution of *R. glesne* is extended to the Argentine Sea, adding a regalecid species to its fish fauna.

Key words: *Regalecus glesne*, *Agrostichthys parkeri*, Argentine Sea, report

Introduction

The regalecid fishes, grouped in two genera and four nominal species, are distributed worldwide in the seas except in the Polar Regions. In the south western Atlantic *Agrostichthys* sp. and *Agrostichthys parkeri* were reported by Gosztonyi (1981) and Figueroa & Astarloa (1996) respectively, and more recently, *Regalecus glesne* and *A. parkeri* were found far beyond the Argentine Sea's eastern limits by Trunov & Kukuev (2005). The descriptions of two specimens of *R. glesne* from Patagonian coastal waters, found stranded on Playa Unión beach at low tide by sport fishermen, during an eleven year span are presented. Also, the reexamination of another regalecid previously reported in the general area is included in order to formally add it to the Argentine fish fauna.

Material examined

Regalecus glesne Ascanius, 1788. Collected at Playa Unión beach, Chubut, Argentine Patagonia, 43° 18' S; 65° 02' W. Specimen 1: female, 3805 mm total length, collected July 14, 1993 by Mr. Luis Ángel D'Antone; specimen 2: female, 4570 mm total length, collected at the same locality, June 15, 2004 by Mr. Julio Castillo. The latter specimen was preserved and catalogued at the Centro Nacional Patagónico (CONICET) Ichthyology Collection under accession number CNPICT 2004/40. Presently it is displayed for public exhibition at the Centro de Interpretación de la Biodiversidad Regional-AQUAVIDA in Playa Unión, Chubut, Argentina.

Agrostichthys parkeri Benham, 1904. Total length 2245 mm. Research Vessel “Shinkai Maru” 1978 Expedition to the Argentine Sea, Cruise 1. Collector Atila E. Gosztonyi, April 4, 1978. Position: 43° 03' S; 58° 57' W, depth 993 m. Preserved material: Head and end of tail, at the Centro Nacional Patagónico (CONICET) Ichthyology Collection, under accession number CNPICT 1978/13.

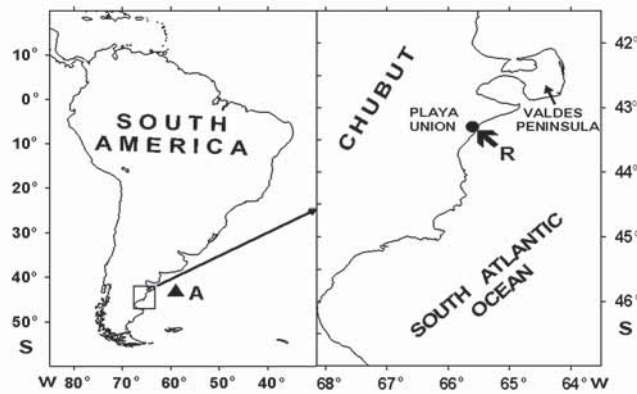


FIGURE 1. Record locations sites of Regalecid fishes in Argentine waters. R: *Regalecus glesne*, A: *Agrostichthys parkeri*.

Results

Morphometric and meristic data of both specimens of *Regalecus glesne* are presented in Table 1 and the collection location and views of the specimens are shown in figures 1 to 3, respectively.

The general body coloration was similar in both specimens being silvery bluish grey with a silvery light brown head, creamy ocular globes, a dark iris and clear pupils. The dorsal fin membranes were red, transparent at the basal part and surrounded the white rays. The pectorals were whitish grey.

In both specimens longitudinal dark bands could be seen along the sides. In specimen 1 the longitudinal bands, seven in number, extended along the whole body whereas in specimen 2 the bands, four in number, were restricted to the first third of each flank and the two remaining thirds had variably sized, irregularly distributed dark spots. Also, in the latter specimen, 1 cm wide and 6 to 7 cm long transverse dark bands extended regularly downwards from the dorsal mid-line on each flank. In specimen 1 the vertical stripes extended from the dorsal and ventral profiles toward the midline of the body to about 1/4 of the flank.

The dorsal fin, beginning slightly in front of the orbits, exhibited nine, 500 mm long cephalic rays, followed by others of diminishing length to a minimum of about 100 mm, at the end of the body. The pelvic fins (damaged in specimen 1) were longer than 35 mm and were supported by a single ray.

The skin, without scales, was covered by dermal tubercles with circular bases, 1 to 3 mm in diameter, either with or without a conical or blunt point, more visible and conspicuous at the ventral zone and lower sides of the body. The lateral line began behind the upper edge of the eyes, turned downward to the lower third of the side of the body ending at the caudal tip. Neither of the two specimens showed any pathological sign or external injury except for the accidentally broken jaw region in specimen 1.

The body cavity of both specimens showed a large, orange colored liver (386 mm long in specimen 2) and two white to pinkish non-turgid ovaries (1000 mm long, with a maximum width of 290 mm and a triangular section in specimen 2) with only immature oocytes.

The stomach, 690 mm long, had numerous pyloric caeca in a 157 mm long mass, and was, just as the intestine, empty in both specimens and no internal parasites were observed.

According to the synoptic consideration of the forms referable to Regalecidae following Walters & Fitch (1960), and those proposed by Castro-Aguirre *et al.* 1991, Salazar-Hermoso *et al.* 1999, and Balart *et al.* 2000, we could diagnose this specimen as belonging to *R. glesne*.

Regarding *Agrostichthys parkeri*, the preserved head and caudal region of a 2245 mm total length regalecid, which was diagnosed as *Agrostichthys* sp. by Gosztonyi (1981), were examined. It could be ascertained that this material belongs to *Agrostichthys parkeri* Benham, 1904 (Fig. 3B). Although this species was already mentioned for the Argentine waters by Figueroa and Astarloa (1996), the extreme paucity of its records at a worldwide level (McDowall & Stewart 1999) deserves the formal record of this specimen.

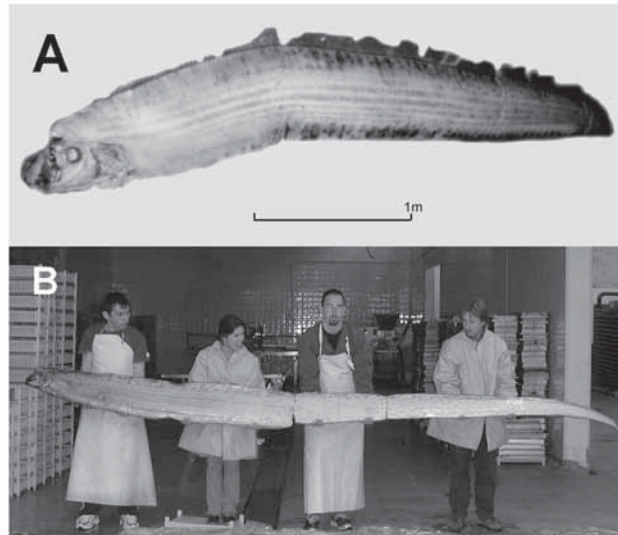


FIGURE 2. A: *Regalecus glesne* collected at Playa Unión (Patagonia, Argentina) on July 14, 1993. (The body is longer than apparent due to the angle in which the photograph was taken.) B: *R. glesne*, same locality, on June 15, 2004. The distance between people is approximately one metre.

TABLE 1. Measurements of *Regalecus glesne* specimens collected at Playa Unión, Patagonia, Argentina. Comparison with *R. russelii* y *R. kinoi* from Bahía de la Paz, Mexico, according to Salazar-Hermoso *et al.* (1999). * absolute value.

CHARACTER	<i>R. glesne</i>				<i>R. russelii</i>	<i>R. kinoi</i>
	COLLECTION DATE				COLLECTION DATE	
	July 14, 1993	June 15, 2004	1 st	2 nd	July 16, 1996	May 28, 1991
	% OF TOTAL LENGTH					
TOTAL FROZEN WEIGHT (kg)	45	43			–	–
TOTAL LENGTH (mm)	3805	4570			5300*	4700*
PREANAL LENGTH	1460	1450	38.37	31.73	–	–
MAXIMUM BODY DEPTH	300	315	7.88	6.89	–	9.57
HEAD LENGTH	200	191	5.26	4.18	6.13	7.94
HEAD DEPTH	–	176	–	3.85	8.86	8.00
HORIZONTAL EYE DIAMETER	35	39	0.92	0.85	0.98	1.00
SNOUT LENGTH	–	80	–	1.75	–	3.51
PREORBITAL LENGTH	–	54	–	1.18	–	1.32
PECTORAL FIN LENGTH	–	88	–	1.93	2.07	3.36
PECTORAL FIN BASE	–	21	–	0.46	1.18	1.15
NUMBER OF PECTORAL FIN RAYS	15	12	–	–	12*	11*
NUMBER OF DORSAL FIN RAYS	–	321	–	–	–	161*
MAXIMUM LENGTH OF DORSAL RAYS	500	439	13.14	9.61	–	–
LENGTH OF THE FIRST GILL ARCH	–	173	–	3.79	4.05	6.21
GILLRAKERS OF THE FIRST ARCH	–	9+34	–	–	49*	60*

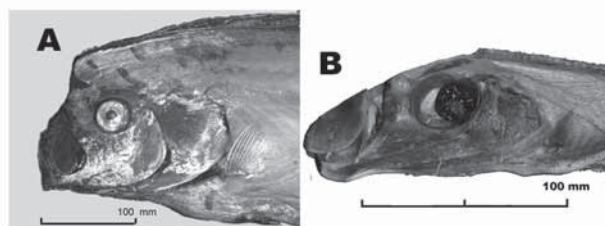


FIGURE 3. A: Head region of *Regalecus glesne* collected at Playa Unión (Patagonia, Argentina) on June 15, 2004. B: Head region of *Agrostichthys parkeri* collected in North Patagonian waters of the Argentine Sea, on April 4, 1978.

Discussion

Both *Regalecus* specimens showed great similarity in anatomical and coloration characteristics, although the smaller one had a proportionally longer head, a larger eye and longer dorsal fin rays. Head and pectoral fin lengths of our specimens were proportionally shorter than those observed both in *R. russelii* Cuvier and *R. kinoi* Castro Aguirre *et al.* 1991, found at Bahía de la Paz, Mexico, by Salazar-Hermoso *et al.* (1999). Also the first gill arch of our second specimen was shorter than (3.79 vs 6.27 % TL), and had less rakers than (9+34=43), those reported for *R. russelii* and *R. kinoi* (49 and 60, respectively). The latter facts might lead us to consider our material as not conspecific with either one of the two nominal Pacific species of the genus.

On the other hand, comparisons with the specimens diagnosed by Trunov & Kukuev (2005) as *R. glesne* and captured in South Western Atlantic waters, which were less than 2900 mm standard length, show coincidences in head length (5.26 vs 5.4–5.8 % TL), the preorbital length (28.3 vs 27.5–31.6 % Head Length), the horizontal eye diameter (20.4 vs 20.1–21.0 % HL) and differ only slightly in almost all other morphometrics.

In the body coloration of the South Atlantic material, Trunov and Kukuev noted the absence of transverse bands and spots in the flanks and associated this observation with a possible South Atlantic color pattern. The presence of spots in both specimens of the Argentine Sea and transverse bands on one of them curtails the arguments of the Russian researchers. In summary, it seems quite reasonable to assign our specimens to *Regalecus glesne* Ascanius, 1788.

There is uncertainty about the number of valid species of *Regalecus*, estimates of which range from one to four according to the different authors. Nelson (2006) considers the genus as monotypic, FishBase (Froese & Pauly 2010) recognizes three valid species (*R. glesne* Ascanius, *R. russelii* Cuvier and *R. kinoi* Castro-Aguirre *et al.*), whereas the CAS Catalog of Fishes (Eschmeyer 2010) recognizes *R. pacificus* Haast in addition to *R. glesne*, *R. kinoi*, and *R. russelii*. In a recent paper Schmitter-Soto (2008), examined recent literature about *Regalecus* and discussed the validity of certain citations in the Caribbean Sea, and considered *R. kinoi* as a synonym of *R. russelii*. Hopefully the forthcoming monograph of Regalecid fishes by Dr. Tyson Roberts (pers. comm.) will shed some light about this particular.

The discovery of *R. glesne* in Patagonian shelf waters, extends its distribution to the Argentine Sea and adds another Regalecid to the Argentine fish fauna in addition to *Agrostichthys* sp. (Gosztonyi 1981), which is rediagnosed herein as *A. parkeri*.

These discoveries and those made in the South Western Atlantic by Trunov & Kukuev (2005), show that these species, together with the trachipterid *Trachipterus jacksonensis* Ramsay (found at 200 m off Río de Janeiro state and reported as *T. nigrifrons* Smith by Menezes [1971] and in Argentine Central Patagonia [Gosztonyi 1979], also cited as *T. nigrifrons* and the recent report by Trunov & Kukuev [2005] of *Trachipterus trachipterus* Gmelin), are the known Trachipteroids of the South Western Atlantic Ocean.

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